

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

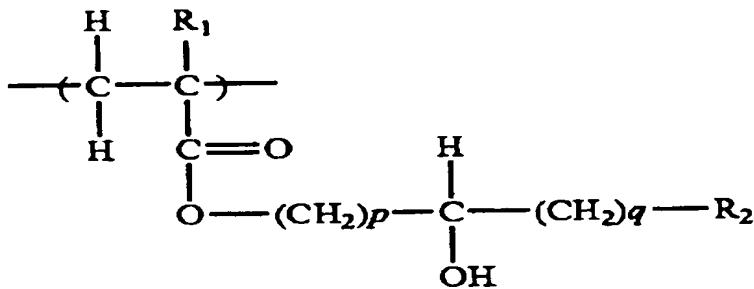
1. (Currently Amended) A gap fill material forming composition comprising:

a crosslinking agent;

a solvent selected from the group consisting of butyl lactate, propylene glycol monobutyl ether, propylene glycol monomethyl ether, propylene glycol, monomethyl ether acetate and cyclohexanone; and

a polymer having a weight average molecular weight of 5,000 to 20,000 and containing components having a molecular weight of 3,000 or less in a rate of 20% or less,
the polymer consisting of a structural unit of formula (1)

(1)



where R₁ is a hydrogen atom, a methyl group, a chlorine atom or a bromine atom;

R₂ is a hydrogen atom or a hydroxy group;

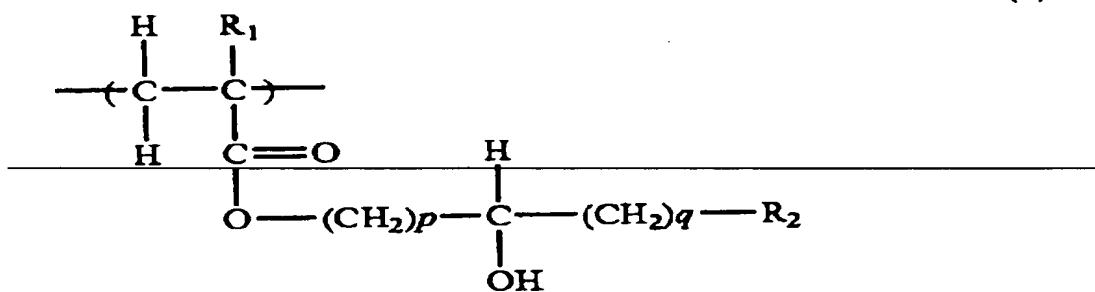
p is a number of 1, 2, 3 or 4;

q is a number of 0, 1, 2 or 3;

wherein the composition is used in manufacture of semiconductor-a

semiconductor device by a method comprising coating a photoresist on a semiconductor substrate having a hole with aspect ratio shown in height/diameter of 1 or more, and transferring an image to the semiconductor substrate by use of lithography a lithography process, and wherein the composition comprises a polymer having a weight average molecular weight of 5,000 to 20,000 that is composed of only consists of structural unit of formula (1)

(1)

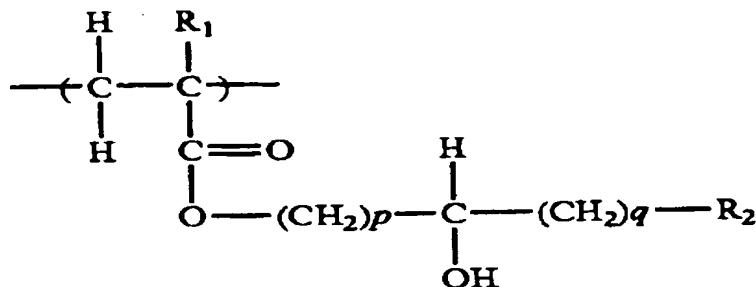


wherein R_1 is hydrogen atom, methyl group, chlorine atom or bromine atom, R_2 is hydrogen atom or hydroxy group, p is the number of 1, 2, 3 or 4, q is the number of 0, 1, 2 or 3, and containing components having a molecular weight of 3000 or less in a rate of 20% or less; a crosslinking agent; and a solvent selected from the group consisting of butyl lactate, propylene glycol monobutyl ether, propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate and cyclohexanone.

2. (Currently Amended) A gap fill material forming composition comprising:
a crosslinking agent;
a solvent selected from the group consisting of butyl lactate, propylene glycol monobutyl ether, propylene glycol monomethyl ether, propylene glycol, monomethyl ether acetate and cyclohexanone; and

a polymer having a weight average molecular weight of 5,000 to 20,000 and
containing components having a molecular weight of 3,000 or less in a rate of 20% or less,
the polymer consisting of a structural unit of formula (1) and a structural unit of formula (2)

(1)



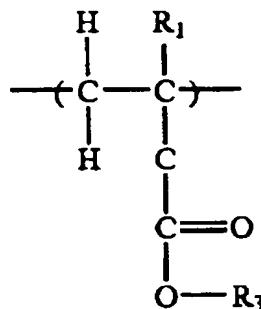
where R_1 is a hydrogen atom, a methyl group, a chlorine atom or a
bromine atom;

R_2 is a hydrogen atom or an hydroxy group;

p is a number of 1, 2, 3 or 4; and

q is a number of 0, 1, 2 or 3;

(2)



where R_1 is as defined above; and

R_3 is a C_{1-8} alkyl group, a benzyl group, a C_{1-6} alkyl group substituted

by at least one fluorine atom, a chlorine atom, a bromine atom, or a C_{1-6} alkyl group

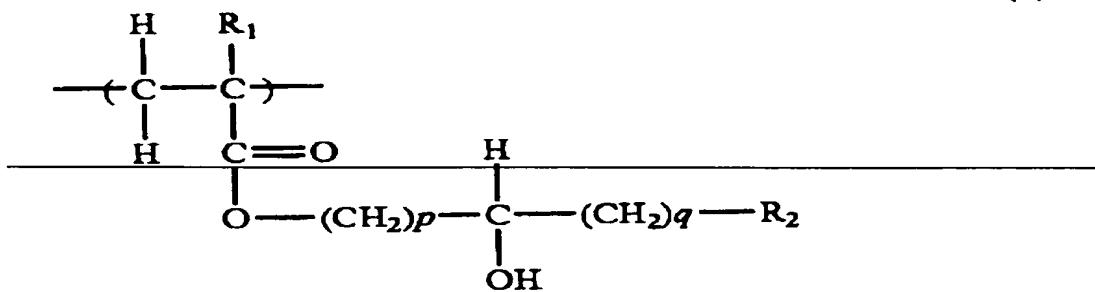
substituted by at least one C₁₋₆ alkoxy group,

wherein the polymer containing the structural unit of formula (1) and the structural unit of formula (2) in a ratio of 0.40 to 0.95;

wherein the composition is used in manufacture of semiconductor-a semiconductor device by a method comprising coating a photoresist on a semiconductor substrate having a hole with aspect ratio shown in height/diameter of 1 or more, and transferring an image to the semiconductor substrate by use of lithography-a lithography process; and

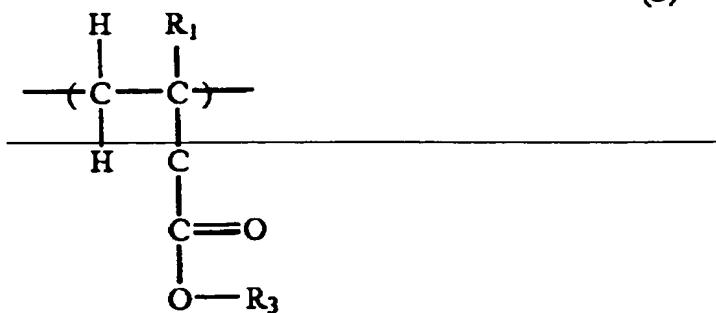
wherein a sum of the molar ratio of structural unit of formula (1) and the molar ratio of structural unit of formula (2) is 1, and wherein the composition comprises a polymer having a weight average molecular weight of 5,000 to 20,000 that is composed of consists of structural unit of formula (1) and structural unit of formula (2)

(1)



wherein R₁ is hydrogen atom, methyl group, chlorine atom or bromine atom, R₂ is hydrogen atom or hydroxy group, p is the number of 1, 2, 3 or 4, q is the number of 0, 1, 2 or 3; and

(2)



wherein R_1 is as defined above, R_3 is C_{1-8} alkyl group, benzyl group, C_{1-6} alkyl group substituted by at least one fluorine atom, chlorine atom or bromine atom, or C_{1-6} alkyl group substituted by at least one C_{1-6} alkoxy group, and the polymer containing components having a molecular weight of 3000 or less in a rate of 20% or less, and containing the structural unit of formula (1) in a ratio of 0.40 to 0.95; a crosslinking agent; and a solvent selected from the group consisting of butyl lactate, propylene glycol monobutyl ether, propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate and cyclohexanone,

wherein the sum of the molar ratio of structural unit of formula (1) and the molar ratio of structural unit of formula (2) is 1.

3.-5. (Canceled)

6. (Previously Presented) The gap fill material forming composition according to claim 1, wherein the crosslinking agent is a crosslinking agent having at least two crosslink-forming functional substituents.

7. (Previously Presented) The gap fill material forming composition according to claim 1, further containing an acid or an acid generator.

8. (Currently Amended) A method for forming a gap fill material for use in lithography process of manufacture of semiconductor a semiconductor device, comprising coating the gap fill material forming composition according to claim 1 on a semiconductor the semiconductor substrate having a hole with aspect ratio shown

in height/diameter of 1 or more and

baking the semiconductor substrate it.

9. (Currently Amended) A method for forming photoresist pattern for use in manufacture of ~~semiconductor~~ a semiconductor device, ~~comprising~~ comprising:
coating the gap fill material forming composition according to claim 1 on a ~~semiconductor substrate~~ the semiconductor substrate having a hole with aspect ratio shown in height/diameter of 1 or more,

baking it the semiconductor substrate to form a gap fill material,

forming a photoresist layer on the gap fill material,

exposing the semiconductor substrate covered with the gap fill material and the photoresist layer to light, and

developing the photoresist layer after the exposure to ~~light~~ the light.

10. (Original) The method for forming photoresist pattern according to claim 9, further comprising a step of forming an anti-reflective coating before or after the step of forming the gap fill material on the semiconductor substrate.